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| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/686,467 | OSHIMA ET AL. | |
| | Examiner Dac V. Ha | Art Unit 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to RCE filed on 04/03/06.
2. The allowed claim(s) is/are 38-41, renumbered as 13-16, respectively.
3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some*
 - c) None
 of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. Notice of Informal Patent Application
6. Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jeffrey R. Filipek (Reg. No. 41,471) on 03/07/07.

The application has been amended as follows:

In the specification, replace the first paragraph with:

This is a reissue application of U.S. Patent No. 5,600,672, issued February 4, 1997, and a divisional application of reissue application No. 09/244,037, filed February 4, 1999, which is also a reissue application of U.S. Patent No. 5,600,672, issued February 4, 1997 which is a Continuation-In-Part of application Serial Number 07/857,627, filed March 25, 1992 now abandoned. Further reissue divisional applications have been filed, all of which are reissues of Patent No. 5,600,672. These further applications are: 09/677,421, filed October 5, 2000; 09/678,014, filed October 5, 2000; 09/677,420, filed October 5, 2000; 09/680,177, filed October 5, 2000; 09/680,176, filed October 5, 2000; 09/686,467, filed October 12, 2000; 09/686,463, filed October 12, 2000; 09/686,466, filed October 12, 2000; 09/688,028, filed October 12, 2000; 09/686,464, filed October 12, 2000; 09/686,465, filed October 12, 2000; 09/666,012, filed September 19, 2000; 09/667,525, filed September 21, 2000; 09/667,438, filed September 21, 2000; 09/668,068, filed September 25, 2000; 09/669,916, filed September 25, 2000; 09/672,948, filed September 29, 2000; 09/672,946, filed September 29, 2000; 09/672,947, filed September 29, 2000; 10/133,347, filed April 29, 2002; 10/133,364, filed April 29, 2002; 10/692,469, filed October 24, 2003; 10/693,526, filed October 27, 2003; 10/635,468, filed August 7, 2003; 10/690,297, filed October 27, 2003; 10/860,666, filed June 4, 2004; 10/782,411, filed February 20, 2004; 10/783,588, filed February 23, 2004; 10/773,811, filed February 9, 2004; 10/882,126, filed June 30, 2004; 10/885,572, filed July 7, 2004; 10/911,680, filed August 5, 2004; and 11/038,006, filed January 19, 2006.

2. The following is an examiner's statement of reasons for allowance:

Upon further consideration supplemental IDS and comparison with prior art of record, claims 38-41 are allowed. Particularly, prior art of record, taking individually or collectively, fails to fairly teach the claimed subject matter, as claimed, including "said modulator operable to divide said m signal points into g signal point groups assign the g values of the first data stream to the g signal point groups respectively, assign data of the second data stream to signal points of each of the g signal point groups, and select the signal points in the vector space diagram according to said input signal, so that: signal points in each of said signal point groups are allocated in the vector space diagram at equal intervals, and a distance in the vector space diagram between any closest two signal points of any adjacent two signal point groups is $2\delta \times n$, where n is a shift value which is more than 1 and 2δ represents a distance in the I axis or Q axis directions between any adjacent two signal points within any of the signal point groups" in independent claims 38, 40 and "the m signal points being divided into g signal point groups each containing m/g signal points, where g is an integer number, and said reconstructed data containing a first data stream including g values of bit patterns which are assigned to the g signal point groups and a second data stream including m/g values of bit patterns which are assigned to the m/g signal points of each of the g signal point groups; said demodulator being operable to reconstruct data of the second data stream corresponding to values of the m/g signal points in each of the g signal point groups and operable to reconstruct data of the first data stream corresponding to values of the g signal point groups; wherein: signal points in each of said signal point groups are allocated in the vector space diagram at equal intervals: and a distance in the vector

space diagram between any closest two signal points of any adjacent two signal point groups is $2\delta \times n$, where n is a shift value which is more 1 and 2δ represents a distance in the I axis or Q axis directions between any adjacent two signal points within any of the signal point groups" in independent claims 39, 41. Thus, claims 38-41 are found to be novel and unobvious over prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-3086. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Dac V. Ha", is written over a horizontal line.

Dac V. Ha
Primary Examiner
Art Unit 2611